

# MEMORANDUM

<b>DATE:</b>	January 4 <sup>th</sup> , 2016
<b>FROM:</b>	Joe Harrington
<b>SUBJECT:</b>	January Weekly Progress Report @ Gold King
<b>TO:</b>	Steven Way

**Project:** Gold King Interim Water Treatment Plant (IWTP) **Reporting Period:** December 28 – January 4

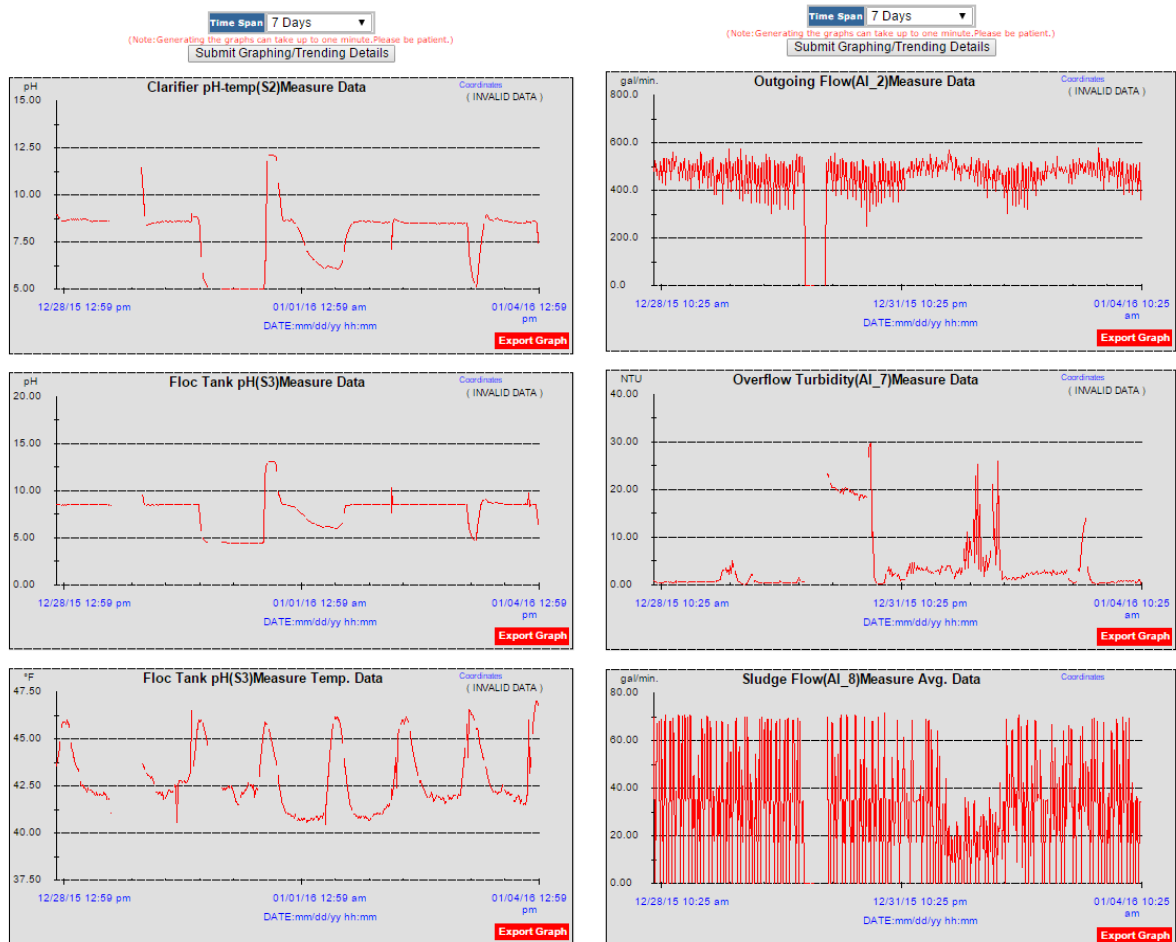
**Location:** Gladstone, Colorado **Report No.:** 3

**Prepared for:** Emergency Response Unit – US EPA Region 8

## I. General Operations Summary:

### IWTS Function/Upsets

- The following graphs provide trending information collected by datalogging equipment during the previous 7 days. These dataloggers collect control information from the Flow Circuit and Lime Circuit Programmable Logic Controllers (PLCs) at the Gold King IWTP. Over the reporting period (12/28 – 1/4/16 inclusive) Alexco treated 4.18 million gallons at an average of 510 gpm, resulting in 40 gpm to the sludge storage system and 470 gpm to the discharge line.



- The IWTP experienced a genset failure from 12:38pm to 8:00pm on 12/30/2015. Alexco immediately called Wagner Rents and a replacement genset was brought up from Durango that evening. The on-site operators and contract electrician stayed late and re-established genset power by 8:00pm. However, during the upset, the heat trace was off on the lime delivery pipelines, and so the pipeline froze before power was reconnected. The lines were thawed and cleaned the next day.
- As shown in the pH graphs above, a plug developed in the intake to the peristaltic lime feed pump for a duration of several hours on 1/1/16. This plug developed because lime powder was constantly demanded by the control system to the lime slurry tank while with the discharge lines were frozen on 12/31. The operators attempted to clear the thick slurry by discharging at a high target pH in the flocc tank (see spike in pH), but then the system plugged from the thick slurry and the pH again dropped. The obstruction was identified and the on-site operator removed it and restored lime slurry flow. A plug again developed a few days later, which again resulted in low pH water for several hours. In addition to bi-weekly maintenance, the concentration of dry lime added to the slurry tank has been reduced to run for several days with a weaker batch at a higher injection rate. This is done to dilute and break-up much of the thicker lime slurry found in the bottom of the tank and reduce plugging.
- From around noon on 1/1/16 until 10:00am on 1/2/16, the 110v air compressor did not provide sufficient air pressure to fully open the underflow sludge valve on the clarifier. This resulted in a drop in the average flow to the bags and a spike in turbidity the morning of 1/2/16. Once grid power is available, Alexco will switch to the larger compressor system which will provide higher quality and more reliable air to the pneumatic sludge control system. The grid-connected compressors are connected to an air receiver tank system containing 20x more volume of air than the temporary genset-operated air compressor and will be able to operate for more than 1 day without loss of desludging capability.

#### **Communication System Function Status**

- EPA(ER) has asked Century Link for a quote to provide internet service to the IWTP, but the status of that request is unknown.

#### **Facility or System Related Work, including Repairs & Completions**

- Precision Electric is completing final system hookup to grid power.
  - An electrical inspector from Durango reviewed the newly installed electrical service at the IWTP on 12/30/15. He identified several details of the electrical service that he felt required adjustments/changes, and those areas are currently being corrected by the onsite electrician.
  - San Miguel Power is scheduled to connect the site to grid power on 1/6/2016. This delay is in respect to the inspector who would not provide approval for the connection to grid power unless his identified checklist items were addressed prior to grid power connection.

### **II. Identified Problems, Causes, and Solutions (Planned or Implemented)**

- Repeated Genset Failure: Alexco currently has two electricians at Gold King who are diligently working to transition the system to grid power with an automatic transfer switch for genset back-up.
- Preventive maintenance schedule for cleaning the intake port to the feed line from the lime slurry makeup system.
- Reduced diameter of the feed line from the intake port to the dosing pump (planned, January 12/13 scheduled maintenance).

### **III. System Inspections – Specific elements inspected and finding**

- The QA/QC box plot analysis of the testing results indicates that the probes deviate beyond acceptable threshold limits around 4 days without cleaning, therefore cleaning has been conducted 3x weekly and will continue at this frequency unless the box plot analysis indicates more frequent cleaning is necessary. Box plot analysis will be conducted monthly. The Project Director will determine if the replacement of the probes is necessary from inspection of the testing results and if the cleaning and calibration schedule is sufficient.

### **IV. Site Status**

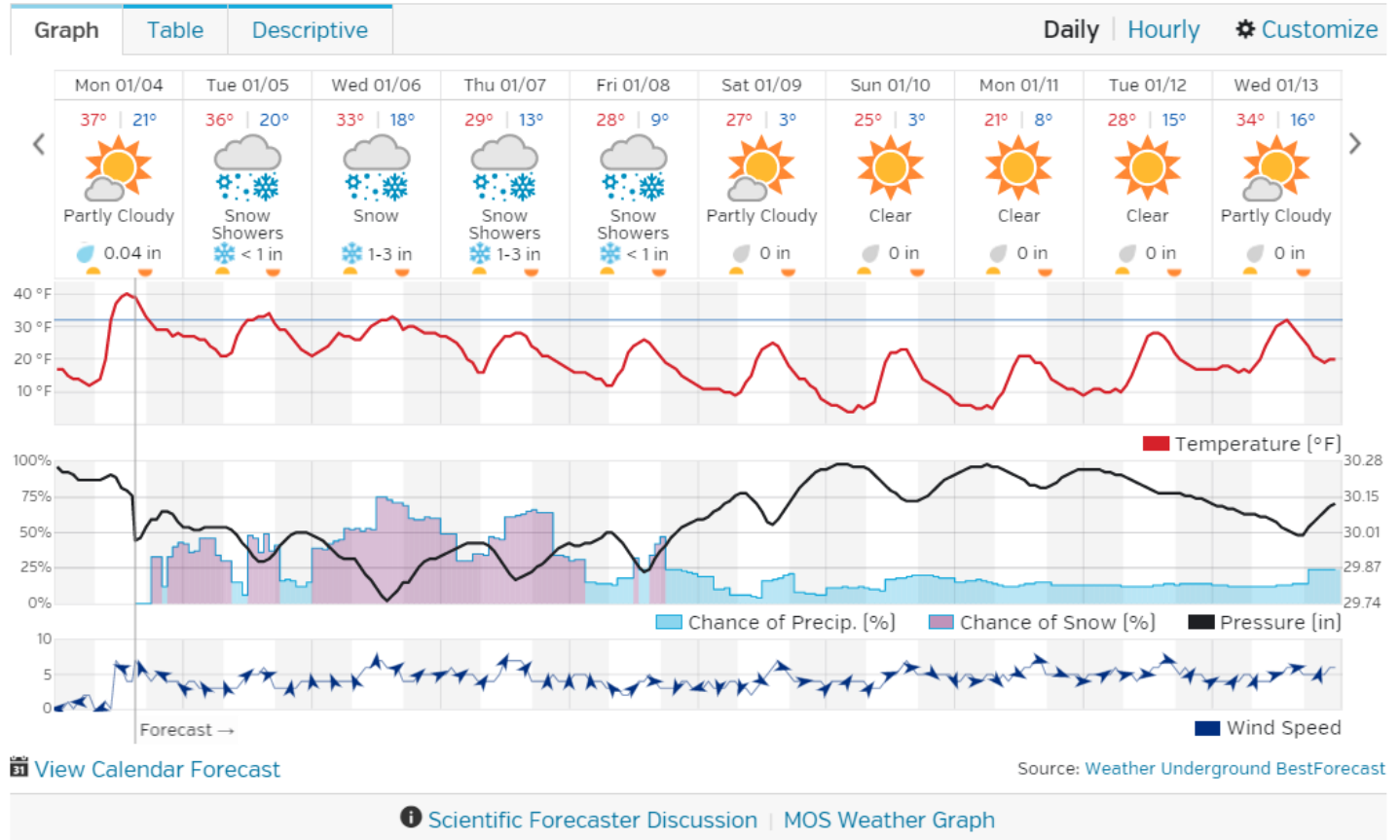
#### **Personnel and equipment onsite**

- Alexco currently employs two FTEs who live in Silverton that oversee operations at Gold King IWTP.

## Weather conditions

- Weather Underground Report for Silverton, CO (12/29/2015 – 1/7/2016)

## 10-Day Weather Forecast



## Site Photographs



**Photo 1 – Taken 12/30/2015, view of the primary and secondary gensets after both quit working.**